BOILER COFIRING OF CHLORINATED HYDROCARBONS

RAVI SRIVASTAVA, MARK WALTON, AND LARRY HAMEL
Acurex Corporation
Energy and Environmental Division
Research Triangle Park, North Carolina

JOHN H. WASSER
Environmental Protection Agency
Air and Energy Engineering Laboratory
Research Triangle Park, North Carolina

Discussion by

Min-Da Ho
Union Carbide Corp.
Linde Division
Tarrytown, New York

This is a very interesting paper with a timely subject. The parametric study has addressed some important factors in the destruction of hazardous wastes in boilers and has shown results that confirm some well-known combustion principles.

A drawback of this paper is the difficulty for readers to apply the results to other circumstances, since some key intrinsic parameters are not given in this paper. For example, there is no mention of the temperature distribution that could have been observed in the boiler, nor of the range of gas residence times. As a result, the test information is based on device-dependent parameters and is hard to interpret. Therefore the conclusion is only somewhat transferable.

The series of transient conditions tests are very informative. It would also be helpful to show how the control system works to keep the stoichiometric ratio in line. Note that the burner control system has a very significant impact on the transient behavior of the stoichiometric ratio. Boiler control techniques such as fuel/air cross-limiting and oxygen trimming have been shown to be very effective in maintaining sufficient oxygen levels at all times, and should be able to handle satisfactorily the transient conditions due to changes in the waste flow rate or the firing rate.

Finally, the examination of nitrogen oxide (NO) as a potential performance indicator is interesting. The idea may be difficult in practice. Indeed, thermal NO is an indicator of temperature and stoichiometric ratio conditions in the flame, but fuel-bound nitrogen is also a source of NO. In addition, NO is not a good indicator of mixing conditions, which are very important for the destruction of hazardous waste in industrial operations.

ERRATUM

Please substitute this figure for the one printed in the *Proceedings* volume.

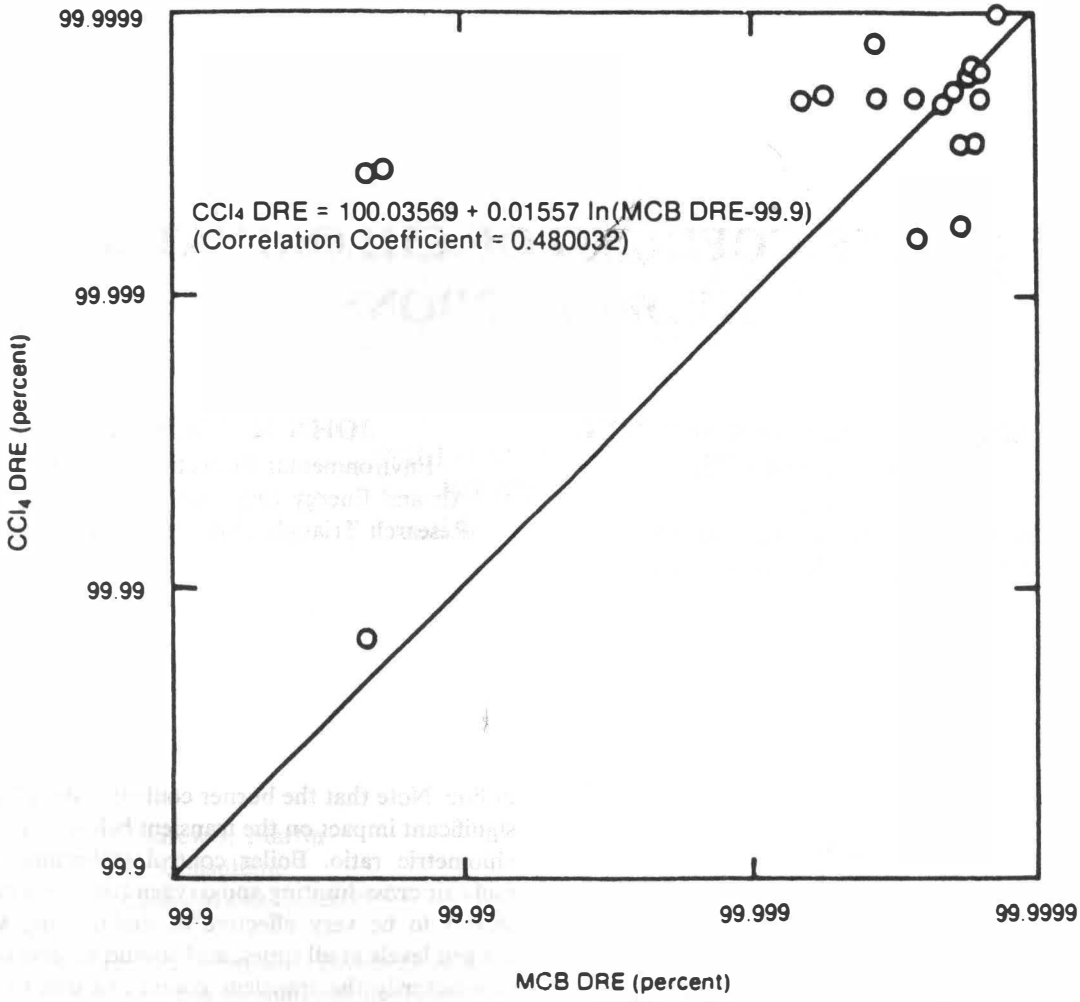

FIG. 9 CCl_4 DRE VERSUS MCB DRE